REMARKS

The application has been reviewed in light of the Office Action dated November 24, 2004. Claims 1-54 are pending, with claims 1, 10, 19, 28, 37 and 46 being in independent form. By this Amendment, claims 1, 4-7, 10, 13, 15, 16, 19, 22, 24, 25, 28, 31, 33, 34, 37, 40, 42, 43, 46, 49, 51 and 52 have been amended to place the claims in better form for examination.

The specification was objected to as purportedly not "clear, concise and exact", as purportedly non-enabling, and for other reasons.

By this Amendment, the specification has been amended with particular attention to the issues raised in the Office Action.

Regarding other issues raised in the Office Action, Applicant traverses the objection.

Regarding the objection to the terms "run aggregate figure" and "run aggregate data", it is clear from the discussion in the specification (and as shown in the drawings) that these terms relate to run length encoding (RLE), and RLE is a well-known topic in the art. As for the location of the discussion in the specification, the patent laws and rules do not require such discussion to be at any particular location within the detailed discussion. The relevant inquiry is whether one skilled in the art reading the written description as a whole and in possession of the common knowledge in the art would understand the terms and be enabled to practice the claimed invention. Applicant maintain that one of ordinary skill in the art of image processing would understand the terms and would be able to practice the claimed invention in view of the written description of the application.

Regarding the term "overlay", Applicant respectfully submits that the term is properly used and distinct from the term "overlap". The term "overlap" is a statement regarding position or location, but does not disclose or suggest the image processing that is applied to two image

data which are "overlapped". In contrast, when a first object "overlays" a second object, the portion of the second object which is overlaid by the first object makes no contribution to the resulting image. Applicant maintains that overlay is the correct term for describing the claimed invention of this application.

Regarding the bus shown in Fig. 1, it is respectfully submitted that the bus element is not an essential element for the claimed invention. A "bus" is mentioned neither in the claims nor in the specification. The claims do not require any particular connection of the elements. Although a bus is shown in FIG. 1 as connecting some of the elements, one skilled in the art would understand, since the specification does not state that any particular connection scheme must be used, that the bus can be used to connect the elements, and alternatively elements can be connected without going through the bus, via direct or indirect connections.

A substitute specification without the claims is attached hereto as **Exhibit B**. A mark-up of the specification is attached hereto as **Exhibit C**.

Withdrawal of the objection to the specification is requested.

The drawings were objected to.

By this Amendment, FIG. 4 of the drawings has been amended. A replacement sheet of drawings for FIG. 4 is attached hereto as **Exhibit A**.

The term "precedently" is replaced throughout FIG. 4 with "preceding" which is consistent with the corresponding discussion in the specification (see, for example, pages 26-28).

The label of step S410 is changed from "CHANGE DIVISION COORDINATE OF PRECENTLY ADJACENT RECTANGLE" to "CHANGE COORDINATES OF PRECEDING ADJACENT RECTANGLE".

Regarding the bus element, as discussed above, the bus element is not an essential

element of the claimed invention and indeed is not mentioned in any of the claims nor in the specification.

Claims 1-54 were objected to as having informalities. Claims 4, 13, 22, 31, 40 and 49 were objected to as purportedly having informalities. The claims were rejected under 35 U.S.C. §112, first paragraph as purportedly failing to comply with the enablement requirement. The claims were rejected under 35 U.S.C. §112, second paragraph as purportedly indefinite.

By this Amendment, the claims have been amended with particular attention to the issues raised in the Office Action.

Regarding the claim term "run aggregate figure", as discussed above, it is clear from the discussion in the specification (and as shown in the drawings) that this terms relates to run length encoding (RLE), and RLE is a well-known topic in the art. Applicant maintain that one of ordinary skill in the art of image processing would understand that the term refers to figures which are represented by run length encoding.

Withdrawal of the objection to the claims and the rejections of the claims under 35 U.S.C. §112 is requested.

Claims 1, 3-10, 12-19, 20-28, 30-37, 39-46 and 48-54 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent Application Publication No. 2003/0152272 of Venable in view of U.S. Patent No. 6,597,363 to Duluk, Jr. et al. Claims 2, 11, 20, 29, 38 and 47 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Venable in view of Duluk and further in view of McIntosh, "Postscript: A Page Description Language".

Applicant has carefully considered the Examiner's comments and the cited art, and respectfully submits that independent claims 1, 10, 19, 28, 37 and 46 are patentable over the cited art, for at least the following reasons.

This application relates to image processing which is capable of accelerating an image overlay process by detecting and omitting an image overlaid. In some instances of image processing, one image (for example, a graphical figure) overlays a second image (for example, another figure). However, conventional techniques typically communicate and then process the image data for the first image in its entirety as well as the image data for the second image in its entirety.

Applicant devised an improved image processing apparatus which detects and then omits an overlaid image. Thus, communication, processing and storage resources can be conserved.

For example, independent claim 1 is directed to an image processing apparatus which sequentially processes graphic rendering instructions for image data. The graphic rendering instructions include first and second graphic rendering instructions. The first graphic rendering instruction is input immediately preceding the second graphic rendering instruction. The first graphic rendering instruction contains first rendering data representing a first original image to render a first output image. The second graphic rendering instruction contains second rendering data representing a second original image to render a second output image. The image processing apparatus comprises an overlay detector and a memory. The overlay detector performs overlay detection to detect an overlay of the first and second original images which are rendered based on the first and second rendering data by the first and second rendering instructions, respectively. The memory stores the first rendering data contained in the first graphic rendering instruction. The overlay detector specifies a portion of the first original image to be overlaid by the second original image upon detecting an overlay of the first and second original images, deletes a specified portion and draws a third output image, based on the original images, in which the specified portion of the first original image is deleted and stores the second rendering data into

the memory.

Venable, as understood by Applicant, is directed to a method for processing multiple digital images wherein bleeding of edges of the multiple digital images can be reduced by determining the boundaries of the images, determining that an overlap of boundaries exists, calculating the overlap and blending the overlapped images to yield a third image which depicts a combination of the two images without an overlap.

However, Venable is not concerned with image overlay, and does not detect means for detecting overlay of one image over a second image. In the processing of Venable, the two images are blended. The techniques of Venable do not save resources by detecting the overlaid image.

Duluk, as understood by Applicant, is directed to assorted graphical processing techniques, such as deferred shading, bled frame buffering, multi-stage hidden surface removal, Phong shading, subpixel anti-aliasing, texture mapping and bump mapping. Duluk was cited in the Office Action as purportedly disclosing sequential processing of primitive groups.

However, Applicant finds no disclosure or suggestion in Duluk of means for overlay detection.

McIntosh, as understood by Applicant, is directed to the POSTSCRIPT page description language.

Applicant does not find disclosure or suggestion by the cited art, however, of an image processing apparatus comprising an overlay detector and a memory, wherein the overlay detector performs overlay detection to detect an overlay of the first and second original images which are rendered based on the first and second rendering data by the first and second rendering instructions, respectively, specifies a portion of the first original image to be overlaid by the

second original image upon detecting an overlay of the first and second original images, deletes a specified portion and draws a third output image, based on the original images, in which the specified portion of the first original image is deleted and stores the second rendering data into the memory, as provided by independent claim 1.

Since the cited art does not disclose or suggest each and every feature of the claimed invention, the cited art does not render the claimed invention unpatentable.

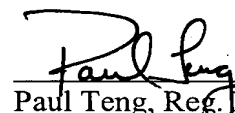Independent claims 10, 19, 28, 37 and 46 are patentably distinct from the cited art for at least similar reasons.

Accordingly, for at least the above-stated reasons, Applicant respectfully submits that independent claims 1, 10, 19, 28, 37 and 46, and the claims depending therefrom, are patentable over the cited references.

If a petition for an additional extension of time is required to make this response timely, this paper should be considered to be such a petition. The Office is hereby authorized to charge any fees that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Allowance of this application is respectfully requested.

Respectfully submitted,

Paul Teng, Reg. No. 40,837
Attorney for Applicant
Cooper & Dunham LLP
Tel.: (212) 278-0400

Amendments to the Drawings

A replacement sheet of drawings attached hereto as **Exhibit A** include changes to, and replace, FIG. 4 of the original sheets of drawings.

The term "precedently" is replaced throughout FIG. 4 with "preceding" which is consistent with the corresponding discussion in the specification (see, for example, pages 26-28).

The label of step S410 is changed from "CHANGE DIVISION COORDINATE OF PRECENTLY ADJACENT RECTANGLE" to "CHANGE COORDINATES OF PRECEDING RECTANGLE".

Attachment: replacement sheets of drawings for Fig.4